



exhausted. The pain and alarm produced by the necessarily often repeated tightening of the ordinary ligature has always formed a great objection to its use.

3. The liability to pyæmic infection would appear to be much less than in operations performed by ordinary ligature. Under the steady gentle pressure of the rubber the vessels are thoroughly occluded before being cut through by ulceration.

4. The elastic ligature is of a peculiarly non-absorbent and unirritating nature.

It should be remembered that fatty matters act upon India-rubber rather energetically, especially at the temperature of the body, so that in cases where the ligature must cut through any great depth of fatty tissue it is likely to break; but even should it do so, another can easily be substituted for the one broken. While I believe that, in all cases where gradual strangulation is indicated, the rubber ligature is to be preferred to the ordinary one of silk or other non-elastic material, I fully recognize the fact that it is open to many of the objections which have caused so many surgeons almost wholly to discard the operation by ligature in any form. I believe, however, that in at least three classes of cases, viz., vascular tumour, hæmorrhoids, and fistula in ano, it will be found the best method of operation. Further experience will show how much beyond this the use of elastic constriction may be advantageously extended.

*ART. X.—Report of Twenty Cases of Stricture of the Male Urethra, with Treatment.* By A. VANDERVEER, M.D., of Albany, N. Y. (With a wood-cut.)

THE following cases of stricture of the male urethra are presented to illustrate the treatment by gradual dilatation, by division, and internal urethrotomy. They also illustrate the use of many of the more modern instruments now employed in the diagnosis and treatment of stricture.

**CASE I. Gradual dilatation; result good.**—May, 1867, C. W., unmarried, on account of intemperate habits for several years, applies for treatment. Six years ago contracted gonorrhœa; has had the disease, either in its acute or chronic stage, ever since; has practised the usual treatment with copaiba, cubebs, and various injections; noticed his stream of urine becoming small during the past three years, and now can only void it with much effort and straining; has a frequent desire to pass his urine during the night; no complete retention at any time, but fears it; desiring to be relieved, and leading a more temperate life, he is anxious for treatment; appears pale and thin, and states that he can attend to his duties only with the greatest effort. Upon examination a No. 3 black elastic olive-pointed bougie passes into the bladder. There is considerable gleet dis-

charge, and the orcthra is decidedly sensitive. Meatas appears quite small; tr. ferri chloridi and fluid extract ergot ordered internally. Continued this treatment for nearly eight months, besides passing bougies two or three times weekly, gradually increasing in size, until No. 15 could be introduced with ease. The discharge ceased entirely, and the patient was directed to use the bougie occasionally, and to continue in his good habits. His general health is now excellent, and in appearance he is decidedly improved.

**CASE II. Single stricture; gradual dilatation; recovery.**—May 14, 1870, E. T. J., æt. 43, of irregular and intemperate habits, applies for treatment to relieve a troublesome and long-standing stricture. First attack of gonorrhœa in 1848; several attacks since; has pursued the usual treatment with copaiba, etc., internally, and has frequently used injections. Eight years ago noticed that the stream of urine was growing smaller, and for the past five years has emptied his bladder with great difficulty; gleety discharge during most of this time. Two years ago, while in San Francisco, was treated by means of bougies, and experienced some relief, the discharge ceasing for over a year; but, neglecting treatment, soon relapsed into his former condition. During the past year is obliged to void his urine every hour or two both night and day, and for the past three months could only relieve himself when sitting upon the water-closet, when he would, also, each time, have a small fecal evacuation from the bowels. Is unable to attend to business; is pale, and feels weak and very despondent; habits are now better, and is very anxious for a restoration of his health. Urine is alkaline; specific gravity 1020, no albumen; has never had complete retention, always being able to empty his bladder by means of hip-baths, etc. Upon examining the urethra to-day a stricture is detected about five inches back of meatus, through which, by gentle exertion, and without causing much pain, a No. 2 black elastic olive-pointed bougie passes into the bladder, but cannot pass smallest size bulbous bougie. Ordered tr. ferri, tr. cantharid., and fld. extract ergot internally.

May 15. Voids his urine with more ease, and, seeing already some improvement, is hopeful.

Sept. 10. Gradual dilatation has been practised two and three times a week; the past four weeks not so often, until now No. 14 steel sound, English scale, can be passed with little pain into the bladder. Not obliged to void his urine during the night, and only three or four times during the day; the stream is full, and under observation is voided with marked force. The discharge, which was quite profuse when dilatation was first commenced, has never ceased entirely, and the patient has gained in flesh, health, and courage; internal treatment continued.

Dec. 1. A No. 15 steel sound has been introduced about once a week, until now No. 16 can be passed with comparative ease; general health good; internal treatment discontinued.

June 1, 1873. Mr. J. has returned every two or three months to have No. 15 or 16 steel sound passed; health is fully restored, and urinary tract apparently as well as ever; is himself taught and directed to pass a No. 15 steel sound once a month for a year at least, and after that not so often. There has been no chill, or any unpleasant symptoms in this case, although the patient is of a very nervous temperament.

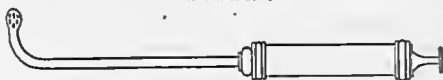
Sept. 23. Patient has passed No 15 steel sound once a month, and twice at my office I have passed No. 16; no unpleasant symptoms;

doing nicely; habits continue good. To-day, with balboas bongie, cannot detect any contraction of urethral canal.

**CASE III. Single stricture; gradual dilatation; recovery.**—August 29, 1870. W. C., æt. 27; habits temperate; first attack of gonorrhœa 18 months ago. The attack was an aggravated one, and attended with much swelling of the penis; severe pain for many weeks in urinating, and a troublesome chordee. Had gone through the usual routine of internal treatment and injection; had taken good care of himself while under treatment. Now feels debilitated and despondent, and appears thin in flesh; frequent desire to micturate during the day and night; there is a gleety discharge present, and the stream voided is small. Upon examination with various bulbous-pointed boagies, a decided stricture is detected with a No. 2 in the membranous portion of the urethra; a No. 2 black elastic boagie passes into the bladder, but causes considerable pain. Ordered 10  $\text{m}$  tr. ferri with 8  $\text{m}$  tr. cantharid., diluted with water, four times daily, and gradual dilatation by means of elastic boagies.

Continued under treatment for six months; passed boagies two or three times a week, besides using for the last three months, after the urethra had become well dilated, a weak injection of either zinc sulph., cupri sulph., or tannin, with the syringe shown below. The long nozzle of this syringe was especially constructed for this case, and the use of the tannia has been attended with beneficial results in other cases of deep urethral inflammation.

Reversible flow.



The general health is much improved, and the discharge has now ceased entirely; not obliged to urinate during the night, and retains his urine for a longer time during the day. No. 17 steel sound is passed with ease to the patient; instructed to pass No. 14 metallic sound at least once every two weeks and to report.

**Aug. 1, 1872.** Has retained good health, and the urinary organs are in good condition; has continued to pass the sound once and twice a month for a year; comes occasionally to have No. 17 sound passed; has not passed the sound so frequently for the past twelve months; there is no contraction; reports himself well.

**Aug. 2, 1873.** W. C. came to-day to have his urethra examined. Passes a good stream, and reports himself as feeling well; no discharge; has not used the sound during the past year. Passed No. 17 steel sound with ease; ordered to pass No. 15 steel sound once a month, and to report occasionally. With No. 12 bulbous-pointed boagie cannot detect any contraction of the urethra.

**CASE IV. Traumatic stricture; gradual dilatation; recovery.**—May 5, 1871. Rev. W. E.; kicked by a horse twelve years ago, the force of the blow received on the perineum. Passed some blood with his urine shortly after the injury; no complete retention at any time, nor was a catheter introduced at the time of the injury. The swelling and ecchymosis never very severe, no abscess formed, the patient gradually recovered from the effects of the injury, and in five months after passed his urine in a full-

sized, natural stream; without pain or effort. During the subsequent five years he enjoyed good health, until after exposure to cold he had some difficulty in passing his urine; had well marked symptoms of cystitis, obliged to empty his bladder occasionally during the night, and was annoyed during the day by dysuria. The stream of urine gradually grew smaller, and it required a greater effort to empty the bladder. He has grown worse until now, when he is compelled to empty his bladder every hour or two during the day and night. The stream has grown very small, and frequently the urine is voided only in drops; has lost strength, is emaciated and much depressed in spirits, being obliged at times to give up his occupation in consequence of this trouble. Has been dosed "ad nauseam" with buchu and many other diuretics. Upon examination to-day the urethra is found to be very sensitive, and No. 3 bulbous pointed bougie is arrested in the bulbous part of the spongy portion of the urethra. No. 2 passes into the bladder, but is held firmly in attempting to withdraw it at the point of stricture. Large sized bulbous bougies pass easily through the portion of the urethra anterior to the stricture. Ordered internally tr. hyoscyamas, tr. caustic., bicarb. potassa, and elix. cinchona, with good generous diet.

Gradual dilatation was practised for two months, when No. 13 steel sound could be passed with ease into the bladder. Patient was now relieved from passing the urine during the night, and could retain it for three or more hours during the day. Internal treatment discontinued, and patient taught and directed to pass No. 13 to No. 15 steel sound at least once a month.

CASE V. *Two strictures; gradual dilatation; good results.*—July 1, 1871. F. J., æt. 23, habits fair; small in stature. First attack of gonorrhœa two years ago. Had the usual treatment internally, and used injections for six months; when about well had an impure connection, and contracted the disease for a second time. This attack proved more severe than the first; was attended with much swelling of the penis and great dysuria, also had chordee; treatment about the same as during first attack. Has a continual gleetly discharge. Noticed about this time that the stream of urine was becoming smaller, with an increasing desire to micturate, frequently obliged to arise during the night to void his urine; has been in this state for six months previous to applying for treatment. Upon examining his urethra No. 5 bulbous bougie detects two well-marked strictures, one near the meatus, and the other in the membranous portion of the urethra. Tr. ferri and fld. ext. ergot prescribed internally. A No. 3 black elastic bougie passes into the bladder, but causes a smarting sensation at the points of stricture. Gradual dilatation was now practised two or three times a week. Continued under treatment six months. The stream now passed was full, the discharge had ceased, and he had no abnormal desire to micturate; No. 14 steel sound passed.

June 1, 1873. Has reported occasionally to have No. 14 steel sound passed; his general condition continues good.

CASE VI. *Single stricture; gradual dilatation; recovery.*—H. L., æt. 22, June 8, 1872, applied for relief of troublesome discharge from his penis. The discharge is accompanied by a frequent desire to micturate and a smarting sensation. Upon observation the stream of urine voided appears small, and requires considerable force. Is finely developed physically, and has not been subjected to exposure; habits temperate. Had his first attack of gonorrhœa in August, 1869; rather severe, from de-

scription of symptoms. The plan of treatment was with copaiha, etc., internally, until the middle of October, when, not improving as rapidly as he desired, he used, and hut once, upon the advice of a friend, a strong injection of nitrate of silver. Four hours after, on attempting to micturate, found that his flow of urine had ceased, and for nearly twenty-four hours was unable to empty his bladder. This caused him great physical distress and uneasiness of mind. He was relieved at this time with some difficulty, and suffering great pain, by the introduction of a No. 8 gum-elastic catheter. After this he passed his urine naturally hut in a small stream. From this time until February, 1870, he passed either No. 8 or 12 elastic bougie every other night. The discharge which was at first troubling him ceased, and passing, as he thought, a good stream, he stopped all treatment, having relied upon his own judgment as to treatment since using the injection of nitrate of silver in October, 1869.

From February, 1870, until the middle of last April he has been quite comfortable, at which time he noticed a return of the old gleet discharge, a gradual decrease in the size of the stream of urine voided, and increasing desire to micturate both night and day. Has had no exposure to a second attack of gonorrhœa. Upon examination to-day there was quite an abundant gleet discharge. Nos. 8 and 5 bulbous pointed bougies upon being introduced are successively arrested about six inches from the meatus. A No. 3 French olive-pointed black elastic bougie passes with slight effort into the bladder. Divulsion was proposed, hut being decidedly opposed to the use of instruments, gradual dilatation was preferred. Ordered 10  $\pi$  tr. ferri after each meal; gr. j quinia every four hours.

*Aug. 1.* Have used bougies, gradually increasing in size, from two to three times a week, until now a No. 16 steel sound is introduced with comparative ease. Quinia was discontinued after two weeks and the iron a week ago; no chills. The discharge has now entirely ceased, and the general health is much improved. Is instructed to use the steel sound, and to pass No. 16 once a week. There is no vesical irritation; patient passes his urine as naturally as he ever has, and is not obliged to empty his bladder during the night.

*March 1, 1873.* Has returned to the office about every two months, and had No. 16 steel sound passed. Is free from any gleet discharge; and is feeling well.

*June 3.* No. 16 steel sound passes with ease into the bladder. Cautioned as to the necessity of passing the sound occasionally. Large size bulbous bougie fails to detect any contraction of the urethra.

*July 29.* Treatment continued, and condition remains good since last date, and gradual dilatation practised two and three times weekly. Discharge has ceased. Patient discharged, and ordered to introduce No. 15 steel sound at least once a month.

The following case of obstinate gleet is one of many met with in practice, and illustrates the folly of internal treatment in the giving of medicines, use of injections, etc., without some attempt being made in some way to restore the urethra to its normal calibre:—

*CASE VII. Obstinate gleet; single stricture; dilatation; recovery.*—September 22, 1872, D. P., æt. 27, habits temperate. First attack of gonorrhœa a year ago; not severe. Treated for six months with copaiha and injections; no treatment during the past six months. At present has no annoying discharge, especially in the morning. Exposure to cold increases

the desire to micturate; complains of an unpleasant sensation in the region of the prostate. Objects to having any instrument whatever introduced; desires to be treated only with medicines, and as he is anxious to be married, desires an immediate cure. Declined to treat the case at all unless he submits to an examination. Patient leaves in a rage.

*October 20, 1872.* Returns, stating that he has taken medicines without any effect upon the discharge; is willing to submit to any examination necessary. No. 5 bulbous pointed bougie detects a stricture in the membranous portion of the urethra. Gradual dilatation was begun, and tr. ferri, cantharid., and fl. ext. ergot given internally.

*February 1, 1873.* Patient has continued under treatment, gradual dilatation being practised twice a week until now. No. 17 steel sound can be passed with ease. No discharge. Departs cured, with the expression that the next time he will believe the doctor.

**CASE VIII. Single stricture; divulsion; recovery.**—*May 31, 1871,* C. J., æt. 27, intemperate, admitted to hospital to-day. First attack of gonorrhœa three years ago; made a speedy recovery by internal use of copaiba, etc.; no injections used. Second attack a year and a half after; treated for six months with internal remedies and injections; at this time there was scarcely any discharge, but did not consider himself well. Soon after this, the gleet discharge still continuing, he noticed that his stream of urine was gradually becoming smaller, the smarting pain upon passing it more marked, that it took longer to empty his bladder, and was obliged to micturate frequently both day and night. This has been the condition of the patient for the past year. During the last two months is obliged to go to the water-closet nearly every time he desires to micturate; passes upon observation no distinct stream at present. His urethra presents a congenital hypospadiæ, about quarter of an inch of the urethral canal being absent at the meatus. Upon examining his urethra with different sized bulbous-pointed bougies, the smallest will not pass a stricture situated in the membranous portion. After injecting the urethra with warm oil, an attempt was made to pass a whalebone guide; although persevering for several hours for three successive days, none could be introduced into the bladder.

Patient took at this time internally tr. ferri and salph. quinae, and flax-seed poultices were applied to hypogastric region. Keeps his bladder empty by frequent attempts to urinate. Had concluded to perform external perineal urethrotomy, but succeeded on the fourth day in a half hour's time, and after using eight guides, in introducing one past the stricture. On this, with some effort, a No. 2 tannelled silver catheter drawing off about a gill of ammoniacal urine. Gouley's modification of Thompson's divulsor was now passed on the guide, and the stricture apparently fully divulsed; about two drachms of blood followed the operation; suffered but little pain.

Nos. 8 and 10 steel sounds now passed with ease. Patient ordered to continue iron and quina. No chill or unpleasant symptom following, steel sounds to No. 15 were passed with little pain. Patient discharged from hospital June 15, 1871, with instructions to have No. 15 steel sound passed occasionally.

*June 1, 1873.* Two years after divulsion. C. J. has reported about every two or three months; have passed each time Nos. 15 and 16 steel sound without any difficulty. Has married since the operation, and become a father. General condition good.

**CASE IX. Relapse in five years after gradual dilatation; divulsion; use of meatotome; recovery.**—December 13, 1872, C. W. (Case I) again applied for treatment concerning his former trouble. Habits have been good since last under treatment, and has married. Had employed the bougie for nearly six months, when, feeling perfectly well, he discontinued its use. During the past few months has had a more frequent desire to pass his urine; has noticed a slight gleet discharge, and also that the stream of urine is smaller. On examining his urethra with a No. 3 bulbous-pointed bougie, a stricture is detected five inches from the meatus, which holds the bougie quite firmly on attempting to withdraw it. Gradual dilatation now employed for six weeks, but No. 10 black elastic bougie gives so much pain at the meatus that I determined to incise it, and attempt divulsion upon the deeper stricture.

*Feb. 1, 1873.* The meatus was freely incised with Gonley's meatotome, and a No. 14 steel sound passed down to the deeper stricture; no unpleasant symptoms ensued.

*17th.* Having first introduced the whalebone guide with Gonley's modification of Thompson's divulsor, the deeper stricture was fully divulsed; slight bleeding; the operation giving him no more pain than the bougie while practising gradual dilatation. No. 14 steel sound was passed into the bladder. Iron and quinia were prescribed during a week, and no unpleasant symptoms presented. Twice a week, for ten weeks, steel sounds up to No. 15 were introduced, at which time the discharge ceased, and he was discharged, with instructions to pass the No. 15 steel sound twice a month.

*Oct. 1.* C. W. has continued to use No. 15 steel sound weekly, feeling well and passing his urine with ease and as naturally as he ever did.

**CASE X. Single stricture; divulsion; recovery.**—May 23, 1872, W. J., æt 34, temperate. Had first attack of gonorrhœa in May, 1865. Made an easy recovery in two months with the usual treatment without injections. In the early part of 1868 had a second attack, symptoms not more severe than the first. Used the same treatment for a year, but still had a constant gleet discharge. At this time was advised to use a strong injection of sulphate of copper, which caused him great pain, and resulted in almost complete retention. Has since abandoned all treatment; has had great difficulty in urinating, and can now pass but a small stream, and at times but a succession of drops. Obligated to micturate frequently during the night, and is frequently unable to perform the act without being seated upon the water-closet, and often has a passage from the bowels at the same time. Is at present thin and emaciated. Upon examining his urethra to-day with a bulbous bougie a stricture is found in the membranous portion, through which only a whalebone guide can be passed, and only after a half hour's steady perseverance, using six guides. No. 2 tunnelled steel sound was first passed on the whalebone guide, then the tunnelled divulsor and the stricture fully divulsed, with little pain and slight hæmorrhage. No. 12 steel sound was now passed into the bladder. Ordered quinia and tr. ferri.

*June 1.* No unpleasant symptoms have followed. A No. 15 steel sound has been passed daily without great pain. Not obliged to empty his bladder during the night; is much improved; treatment to be continued.

*Aug. 10.* Patient has reported every two weeks, and had Nos. 15 and 16 steel sound passed. Condition is very much better. Internal treatment discontinued. Ordered to pass sound occasionally.

*Oct. 30, 1873.* W. J. has not reported since last note of case until to-

day. . . sound used since Aug. 10, 1872. Passes a good stream. No. 16 steel sound passes with little pain into the bladder. Bulboos bougie fails to detect any remains of stricture.

**CASE XI. Single stricture; divulsion; recovery.**—H. J., æt. 45; hotel keeper, of intemperate habits. First attack of gonorrhœo in 1848, said to have been complicated with chancre in urethra. Treated with mild injections. Symptoms subsided in six to eight weeks. No difficulty in passing his urine after this attack. Second attack in 1861, which readily yielded to treatment in four or five weeks. No trouble in voiding urine after this—passing a good stream. Had a third attack in March, 1868, which proved to be more severe, the discharge making its appearance freely forty-eight hours after exposure. Treated as before with injection, etc.; had a severe attack of orchitis when partially cured. Had from the beginning difficulty in voiding his urine, while he noticed with anxiety that the stream was gradually growing smaller. After eight weeks' treatment he thought the discharge had entirely ceased, but since has had great difficulty in voiding his urine. Obligated to frequently void his urine drop by drop, both day and night. Sometimes would consume fifteen minutes in emptying his bladder, and at times obliged to assume almost every possible position to effect it.

November 30, 1872. Upon examination to-day a stricture is detected five inches back from the glans penis or meatus. After using several whalebone guides, one passed the stricture with slight effort, and entered the bladder. Upon this No. 2 tunnelled sound, then Gouley's No. 3 tunnelled silver catheter was passed, and through the latter the urine now flowed freely. Thompson's tunnelled divulsor was then introduced, and the stricture freely divulsed; pain not severe; slight hemorrhage. Immediately after No. 15 steel sound was passed; patient complaining of very little pain. Ordered internally 1 gr. quinia every three hours, and 10 m. tr. ferri three times daily. This treatment was continued for a week, no chill or unpleasant symptom following. Nos. 15 and 16 steel sound were passed every other night. After this No. 16 sound was passed weekly for a month. Internal treatment now discontinued, and patient warned of the necessity of having sound passed occasionally. Has, however, not since reported.

**CASE XII. Traumatic stricture; partial divulsion; urethral fever; gradual dilatation; recovery.**—May 11, 1872. McC. E., æt. 24; unmarried; temperate habits. While following his daily occupation—paper hanger—fell astride of a step-ladder, and received a severe contusion on the perineum. States that he did not void his urine nor pass blood after the fall, but that the urine was drawn on the 12th, 13th, and 14th, and noticed an escape of blood after the use of the catheter. After the 14th, he passed his urine with the aid of warm hip-baths and anodynes, until July 20th, when he could only void it in drops. Has a constant desire to micturate, and can only do so with great effort when seated upon a vessel. At this time I was called to see him in consultation with his attending physician, Dr. McGuire. Upon examination with a bulboos-pointed bougie, it was arrested in the membranous portion of the urethra, and after injecting the canal with worm oil, or ordinary iostroment would pass the point of stricture. After an hour's effort with whalebone guides, one was finally passed into the bladder, upon this No. 2 tunnelled sound, and then Thompson's divulsor; the latter causing such great pain and distress the divulsion was not completed. After this, however, the urine



passed more freely, but the imperfect divulsion was followed by severe arethral fever, which did not yield for several days to the use of quinia in large doses, tr. aconite, anodynes, external application of heat, etc., etc.

July 25. The orethral fever has subsided and only No. 7 steel sound can be introduced with gentleness into the bladder, causing little or no pain. No great pain following the use of the steel sound, gradual dilatation was practised up to September 1, 1872, when No. 18 steel sound could be passed into the bladder with very little pain. No. 17 and 18 steel sounds were now passed once a month.

September 10, 1873. Patient, at request of Dr. M., reported to-day, and No. 18 steel sound can be passed with ease. Condition good. No vesical irritation. Directed to use No. 17 steel sound once every month or two.

CASE XIII. *Two strictures; use of meatotome; dilatation; divulsion; partial recovery.*—S. C., æt. 26, unmarried; habits temperate. July 10, 1872. The patient presents himself to-day with the following history. It is here given verbatim: "First noticed a slight discharge from the penis on the evening of the 27th of June, 1871, having on the 24th previous been in a drenching storm all day and thoroughly wet through; took sandalwood oil without any perceptible effect for three weeks; then took cubebs and copaiba paste for about a month; neither a diminution nor increase of the discharge; consulted a physician who gave me uva ursi and an injection of sulphate of zinc. Up to this time, about two months having elapsed, had no trouble in urinating, there appearing to be no inflammation, no chordee, nothing but the simple discharge. After using the injection a short time, the penis began to swell, the discharge became copious, and micturition very painful. This state of things lasted for a great while, during which time I had used several different injections and a variety of prescriptions. But finding no benefit I stopped taking medicines, and simply used a wash of sal soda, by which I succeeded in keeping the parts perfectly clean and in reducing the inflammation. Then took cannabiss and centarides—homœopathically—but without any apparent benefit."

Upon examining the arethra with a No. 3 bulbous-pointed bougie, a stricture is detected just behind the meatus, and another in the membranous portion of the urethra. There is a free gleet discharge, with a constant desire to micturate. The stream of urine has gradually decreased in size, and it requires great effort on the part of the patient to empty his bladder. The stricture behind the meatus was incised with a common bistoury, and Nos. 10 and 12 elastic bougies passed down to the deeper one. Slight hemorrhage. Directed to use No. 12 bougie, and to introduce it for two inches; but the discharge ceasing, he neglected himself and applied for no farther treatment until August 24, 1873. The stream of urine was decidedly small, and the desire to micturate frequent. Obligated to empty his bladder frequently during the night. No. 2 bulbous-pointed bougie will hardly pass the stricture back of the meatus, but passes the deeper stricture with ease. The stricture near the meatus was now freely incised with the meatotome; hemorrhage profuse and arrested with some difficulty. No. 14 steel sound passes down to the deeper stricture. Sound passed for four successive days, and at each time the hemorrhage was quite annoying.

August 29. Being exposed to a cold rain, the patient had severe chills followed by diarrhœa and exacerbations of fever for nearly a week. Urine scanty, and micturition attended with much pain in lumbar and hypo-

gastric regions. Iron and quinia ordered internally, with heat, etc., to be applied externally. No sound having been passed during the illness of the patient, the stricture back of the meatus had again somewhat contracted.

*September 7.* Patient being in good condition, a whalebone guide was passed with little effort through the deeper stricture into the bladder, on this No. 2 tunnelled sound, then No. 3 tunnelled silver catheter, and about a gill of urine withdrawn. After this, Gouley's modification of Thompson's divulsor was introduced, and the stricture in the membranous portion of urethra thoroughly divulsed, attended with much pain and some hemorrhage. No. 10 steel sound was now readily passed into the bladder. Quinia and iron ordered to be continued. No unpleasant symptoms followed.

*19th.* Gradual dilatation having been practised daily, and No. 13 steel sound scarcely passing the meatus, the latter is again freely incised with the meatotome. Hemorrhage considerable. Nos. 15 and 16 steel sound passed for a short distance.

*October 1.* Patient's condition good, except sensitiveness of the urethra near the deeper stricture. The passage of a larger than No. 10 steel sound causes much pain and distress at this point. Directed to continue the use of tr. ferri with mucilaginous drinks.

*November 1, 1873.* Gradual dilatation has been continued until now. No. 13 steel sound is passed with comparative ease. Ordered to continue treatment.

*CASE XIV. Three strictures; divulsion; gradual dilatation; use of meatotome, and Gouley's dilating urethrotome; recovery.*—C. T. A., sent from Bennington, Vt., for treatment; æt. 30; of intemperate and irregular habits; saloon keeper. Two years ago had first attack of gonorrhœa, very severe in character, and attended with chordee and painful micturition. Considerable time elapsed before the symptoms subsided, and has not been free from a gleet discharge since. Injections were used with bel. coquiba, etc., internally for some time. A year ago had second attack of gonorrhœa, for which the usual treatment was pursued for three months without injections. Gleet discharge has continued. Six months ago, after an impure connection, noticed a chancre on the outer surface of the glans penis, which yielded readily to treatment; very little internal treatment. During last three months has voided his urine with some difficulty, having also a frequent desire to micturate, and requiring a long time to empty the bladder. The stream of urine has become gradually smaller, until at times it could only be passed in drops. Is obliged to empty his bladder frequently during the night. For the past year has himself occasionally passed a No. 5 English bougie; has not made use of it during the past six weeks, being unable to introduce it for any distance into the urethra.

*March 20, 1873.* Applies to-day for treatment, fearing that if he is not soon relieved, he will be altogether unable to void his urine. His mouth, upon examination, presents several mucous patches, and there are patches and condylomata about the anus. Upon examining the urethra with a No. 6 bulbous-pointed bougie a stricture is detected just back of the meatus; it is also arrested at a point  $5\frac{1}{2}$  inches from the meatus. No. 3 will not pass this point. After some effort with eight whalebone guides, one is finally passed into the bladder, upon which a No. 2 tunnelled sound was guided with little effort, and attended with no pain. A No. 3 tunnelled

catheter was now passed, and a small quantity of urine was withdrawn, showing that the instrument had passed into the bladder. The patient being unable to leave his business, and wishing to return home the next day, I determined not to operate on the stricture near the meatus at present, but to use the divulsor on the deeper one. The instrument was passed easily on the guide, and the stricture was divulsed until the index marked No. 12, when, there being much pain, I desisted, about half a drachm of blood following the operation. Ordered to take 1 gr. quinia every three hours, and report in the morning.

21st. Called this morning, stating that he had not passed so comfortable a night for a long time. Passes, he says, a good stream; no chill or fever. A No. 9 Thompson's steel sound was now passed with ease and little pain. Ordered to drink flaxseed tea, continue quinia, to keep quiet, and to remain in the city for another day at least.

22d. No chill or fever. The introduction of No. 9 steel sound is attended with little pain. Complaints of considerable pain near meatus when attempting to introduce No. 10. Being anxious to return home, he is ordered the same treatment as before, and in addition a gargle of potass. chlor. and ammonia. mor. for his throat, and to return in three days.

26th. Is feeling much better; no chill or fever; passes his urine less frequently and better than for a year past. No. 9 steel sound is introduced with ease. I now wished to incise the stricture near the meatus, but the patient being obliged to return home desired me to wait for a few days longer. Same treatment to be continued.

31st. States that his throat and nose are troubling him, but feels much improved as regards his urinary difficulty. The stricture near the meatus was now incised with the meatotome, and a No. 11 steel sound passed with little pain into the bladder. Very little hemorrhage. Ordered to introduce night and morning a No. 12 elastic bougie an inch into the urethra, so as to prevent contraction of the stricture near the meatus. Ordered to take, two or three times daily, a pill of the following: R. Hydrarg. chlor. corrosiv. gr.  $\frac{1}{2}$ ; extract hyoscyam., extract gentian., aa gr. j; ferri chlorid. gr.  $\frac{1}{4}$ , M.; and ung. hydrarg. ammoniat. to be applied to the oses two or three times daily. Also to continue gargle for throat. Ordered to report in a few days.

April 5. No chill or fever; progressing finely; feels much improved in every respect; obliged to urinate but once or twice during the night. No. 13 steel sound passes with little difficulty. To continue treatment and report in a week.

12th. Secondary symptoms improved; sleeps well during the whole night, and states that he is passing his urine as well as ever. Nos. 13 and 14 steel sounds pass with ease, but No. 15 causes much pain about two inches back from the meatus, and at the meatus itself. With a No. 10 bulbous pointed bougie a well-defined stricture is detected two and a half inches from the meatus. This stricture is to be incised with Gouley's urethrotome. To continue treatment.

21th. Has not reported on account of marked improvement. Same instruments as were used on the 12th, now introduced with ease; condition good. Wishing to return, he is instructed to use No. 14 steel sound and to pass it every four days, and to report in two weeks. To continue treatment for secondary symptoms.

May 10. Has used No. 14 sound without difficulty, and is much improved in health, secondary symptoms having subsided very decidedly.

No. 15 steel sound causing much pain at the meatus when introduced, the latter was again freely incised with the urethrotome, when Nos. 15 and 16 were passed, but causing much pain at the stricture, two and a half inches back, ordered to use large bougie, and keep the meatus well opened.

15th. No. 15 steel sound is introduced without difficulty. Wishing to return, he is ordered to use No. 15 twice a week, and to await results before treating the stricture two and a half inches back.

August 1. The stricture two and a half inches back from the meatus was freely incised with Gouley's diluting urethrotome, and No. 16 steel sound passed into the bladder with ease; very little hemorrhage followed. General health very much improved; directed to use No. 15 Thompson's sound every two weeks. The throat symptoms becoming troublesome, he is directed to take three of the pills prescribed before daily.

September 1. Mr. A. reports himself as doing well; passes Nos. 15 and 16 steel sound without difficulty. Urinates as when in perfect health. Continued treatment.

CASE XV. *Abscess and vesical fistula in perineum, also fistula in ano; two strictures; gradual dilatation and use of Vollemier's divulsor; good result.*—Service of Dr. J. H. Armsby. October 28, 1871, McC. D., æt. 24, pale, emaciated, admitted to hospital to-day. Has had several attacks of gonorrhœa; treated internally, and also used injections, etc. Upon examination a fistulous opening is discovered on the left side, and in front of the anus, connecting with the bowel and also the urethra. There is continual discharge of fecal matter and gas, and also of urine when he attempts to urinate. Quinin and tr. ferri ordered internally with generous diet; passes a moderate sized stream of urine, but with difficulty.

November 20, 1871. This condition having improved, the fistula in ano was operated on in the usual manner. Twelve to fourteen hours after the operation an alarming hemorrhage set in, and was finally controlled with the greatest difficulty by means of liq. ferri subsulph. and compressed sponge. Although considerably weakened by the hemorrhage, the operation proved successful as regards the fistula in ano. The fistulous connection with the urethra still remained open, and urine escaped whenever an attempt was made to empty the bladder.

January 1, 1872. Service of Dr. Vanderveer; McC. D. is still in bed, but improving slowly.

20th. Having had some trouble in voiding his urine, a careful examination was made which revealed two strictures in spongy portion, one two inches, the other four inches from the meatus. After some effort a small whalebone guide was passed into the bladder, and on this Gouley's No. 3 tunnelled silver catheter; about a pint of urine was withdrawn. On account of the great pain attending the operation he was anesthetized. This exhausting him very rapidly, the catheter only was passed. By aid of a No. 3 elastic bougie urine was passed much more easily, and with more freedom than for a year past; several chills and a sharp urethral fever followed the operation. Being in a weak condition, the iron and quinia were continued, and further operative proceeding abandoned for the time being.

March 1. Patient is improving and is about the ward. Dr. Swinhurne, while in temporary charge, during illness of Dr. Vanderveer, finding the patient in good condition, after having chloroformed him, passed Vollemier's divulsor and ruptured both strictures; considerable hemorrhage

following, but no other unpleasant symptoms. Nos. 8 and 10 steel sounds were now passed with ease. Patient was directed to pass No. 10 steel sound. The fistula in the perineum connecting with the urethra is now entirely healed. Discharged from the hospital June 1, 1872. Patient not heard from since.

**CASE XVI.** *Two strictures; use of meatotome and urethrotome; urethral fever; recovery.* Reported by Dr. Whitehorn, house physician, July 25, 1873.—R. W., Greenville, Greene Co., N. Y., æt. 28, strong and robust constitution; admitted to hospital as a private patient. Contracted gonorrhœo four and one half years ago, for which he consulted no physician until it had become a chronic gleet. Eight months after thought he had recovered, when after an occasional spree, he noticed a discharge which continued for a week at a time; was in this condition for a year, when he sought medical advice. Bougies were used, the discharge ceased, and he micturated freely again for six months. About this time drinking freely of cider, the discharge again appeared. There was also renewed dysuria. Took bul. coprib. and spts. æth. nitros., with some relief. Up to four months ago his condition became more and more aggravated, when he could only pass his urine by drops, and with more comfort when seated upon a bench than otherwise. This condition was alike at all times, being obliged to micturate every few minutes, else the urine dribbled away; had sharp momentary pain in inguinal region when nearly through micturating. Upon examination to-day (July 25, 1873) a slight stricture is detected half an inch back of the meatus, and another in the spongy portion of the urethra, through which No. 3 bulbous-pointed bougie will not pass. Urine of a pale colour, slightly acid; no albumen. Ordered, R. pulv. Tully grs. v, every two hours. R. tr. ferri chlorid. ℥x, three times daily. R. inf. ulmi, as a drink ad libit.

26th. Bowels moved freely; feels somewhat better; slept fairly; with some trouble a whalebone guide is introduced, on this No. 2 tunnelled sound, then No. 3 tunnelled silver catheter, after which the urine was voided with comparative ease.

27th. Slept well; urinated freely throughout the day; appetite improving.

28th. Condition as yesterday; this P. M. divided first stricture with the meatotome; operation almost painless; now passed No. 14 steel sound through and as far as second stricture; very little hemorrhage.

29th. Improving; during the forenoon introduced No. 16 sound through divided stricture; attended with considerable pain and hemorrhage; no other unfavourable symptoms.

30th. Nos. 14 and 16 sounds were introduced down to second stricture with but little pain and hemorrhage.

31st. Doing well.

August 1. Condition good; at 12 M. introduced Gooley's urethrotome upon guide, and divided second stricture from before backward on floor of the urethra. Passed No. 10 sound into the bladder, attended with very little pain and hemorrhage. At 3 P. M., patient was seized with rigors; applied hot water to feet and extra blankets ordered; relieved in about five minutes; pulse 90, soft and full; skin warm and moist; countenance anxious. Shortly afterwards, attempting to use the commode contrary to orders, he suddenly became faint and much prostrated; pulse 100, soft and full; profuse perspiration; face wan and anxious; respiration sighing; voice weak; stimulants administered cautiously. Shortly afterwards again seized

with rigors; applied heat to feet and spine, sinapism to epigastrium (to relieve nausea). Gradual improvement; 9 P. M. temp.  $103^{\circ}$ ; pulse 98 to 104; skin moist. Ordered R. quiniæ sulph. grs. iij, every two hours. R. iufus. lini sem. for a drink ad libit. To continue the iron; hot hop pillows applied to lumbar region; large flaxseed poultice over abdomen.

2d. 8 A. M., passed a sleepless but comfortable night until 3 A. M., when he had a slight chill, lasting but a few minutes; usual treatment; micturated once during the night, passing about 8 oz. of urine; pulse 80; temp.  $99^{\circ}$ ; countenance cheerful and light; no sound ased. 3 P. M., was again seized with rigors for a few minutes, followed by profuse perspiration; pulse 84; temp.  $102^{\circ}$ . 9 P. M., pulse 74; temp.  $99\frac{1}{3}^{\circ}$ ; usual treatment.

3d. 8 A. M., pulse 74; temp.  $99^{\circ}$ ; doing well. 3.15 P. M., had a chill lasting fifteen minutes; great prostration; pulse 96; temp.  $103\frac{2}{3}^{\circ}$ . 9 P. M., pulse 74; temp.  $103\frac{1}{3}^{\circ}$ ; skin warm and moist; usual treatment combined with quinin; hot hop pillows and poultices were applied.

4th. 8 A. M., pulse 74; temp.  $99^{\circ}$ ; passed a comfortable night under influence of Tully powder. R. pil. quiniæ sulph. gr. j, five every two hours up to 6 P. M. 3 P. M., though no unfavourable symptoms manifested themselves, ordered hot applications as a preventive to chill. 9 P. M., pulse 98. Free secretion of urine; passed No. 8 steel sound.

5th. 9 A. M., pulse 66, regular and strong; tongue furred; slept well; skin moist and warm. 9 P. M., pulse 54; temp.  $96^{\circ}$ ; appetite good, and sleeps occasionally. From 8 A. M. to 6 P. M., took 5 grs. quinia every two hours, using at the same time hot applications as before; now decreased the quinia to grs. iij, every two hours.

6th. 9 A. M., pulse 75; temp.  $97^{\circ}$ ; slept well; appetite good; bowels regular. 9 P. M., pulse 68; temp.  $97\frac{1}{3}^{\circ}$ ; passed No. 10 sound.

7th. 9 A. M., pulse 69; temp.  $98^{\circ}$ ; doing well.

8th. 9 A. M., pulse 70; temp.  $97^{\circ}$ ; doing well. At 4 P. M., introduced Nos. 10 and 12 steel sounds without trouble. At 6 P. M., had a slight chill; pulse 102; temp.  $100^{\circ}$ . Continued usual treatment, and gave R. tr. aconiti. rad. gtt. ij every two hours. 11 P. M., feeling much better.

9th. 9 A. M., slept well; pulse 72; temp.  $98^{\circ}$ . From this time until his discharge, August 11th, his progress towards recovery was uninterrupted. He had 10  $\eta$  tr. ferri three times daily and one grain of quinia every three hours. The urethra admitted the easy passage of No. 16 Thompson's sound.

October 1. R. W. has reported every two weeks, and No. 16 Thompson's sound was passed. Is improving in general health and strength. Is given No. 16 black elastic bougie, and directed to pass it himself once a week. Has continued the use of the iron and quinia since leaving the hospital, 10 drops of the former, and three grains of the latter three times a day.

CASE XVII. *Gradual dilatation; use of urethrotome; stricture of large calibre and use of Gouley's dilating urethrotome; recovery.*—December 10, 1872, D. C. M. A., æt. 35; health good; habits temperate. Had a severe attack of gonorrhœa five years ago; treated with copaiba internally and injections; has had a slight gleet discharge since. Two years ago had cystitis, and since then complains of much pain, and a sensation of heat in the region of the prostate gland. There has been a frequent desire to micturate, and obliged to arise two or three times during the night to empty his bladder. Has also noticed during the past six months

that the stream of urine has become quite small. Upon examination with a No. 5 bulbous-pointed bougie, a stricture is detected one-quarter inch back from meatus, and another in the membranous portion of the urethra. Ordered tr. ferri and fluid extract ergot internally. Gradual dilatation was practised upon the deeper stricture two and three times a week until March 1st. The strictures being very unyielding and the introduction of No. 10 steel sound causing great pain at the meatus, the latter, including the first stricture, were freely incised with the meatotome; the patient desiring not to have division performed upon the deeper stricture. No. 14 steel sound passed down to the deeper stricture. No unpleasant symptom followed. The use of the meatotome caused much less pain than the bougie or sound while practising gradual dilatation. The deeper stricture was now gradually dilated.

*May 1.* On passing No. 15 steel sound there is great pain at the meatus, which had somewhat contracted; this was again incised, with no unpleasant symptom following. The discharge has abated; micturates freely and with ease; reports himself as feeling very well; internal treatment discontinued.

*July 1, 1873.* No. 16 steel sound has been passed once a week; patient improving; instructed to use a No. 12 elastic bougie once a week, and to report occasionally.

*August 1.* S. returns reporting that for the past two weeks has noticed occasionally in the morning a moisture about the meatus, and that it annoys him; notices also after urinating, when he believes the act completed, an escape of several drops of urine. Upon examining his urethra carefully with a No. 11 bulbous-pointed bougie, a stricture of large calibre is detected three inches from the meatus. Gouley's dilating arethrotome was then introduced, the stricture well dilated and incised; considerable hemorrhage followed and continued for nearly two days. No. 17 steel sound was now introduced with no unpleasant symptom following; a stricture can be detected at present.

*September 1.* Nos. 16 and 17 steel sounds have been passed weekly; noticed no moisture of the lips in the morning, and no dribbling of urine after emptying his bladder.

*25th.* Patient continues well; passing No. 16 steel sound about once a week.

**CASE XVIII.** *Five strictures; gradual dilatation; use of meatotome; partial recovery; patient to return for further treatment.*—*September 2, 1873.* McG. J. F., æt. 45; habits temperate; first attack of gonorrhœa in 1868; was very severe in character and attended with much swelling of penis; painful chordee and a very profuse discharge; treated with little benefit for nearly a year with copiaba, etc. During most of this time the discharge continued, attended with much pain and scalding, and a frequent desire to micturate. He finally refused any further treatment, and after a short time found himself somewhat improved. During 1870, notwithstanding a constant gleet discharge, he was quite comfortable, not being obliged to pass his urine so often, and effecting it with comparative ease. During the early part of 1871 he was kicked by a horse, receiving the force of the blow in the testicles and penis. These organs swelled very rapidly, became very ecchymotic, and patient was confined to his bed in consequence during several weeks. Passed frequently small quantities of urine mixed with blood; no complete retention; six months after recovering from the injury he had sufficiently recovered to again attend to his duties.

He soon noticed that the stream of urine was smaller than usual, but could always empty his bladder; obliged to micturate frequently during the night. In November, 1872, while riding a vicious horse he was thrown against the horn of the saddle and injured his penis and testicle for a second time. The swelling and ecchymosis were as great as when first injured; greater dysuria; and attended with hæmaturia; confined to the house during two weeks. From this time until September 2, 1873, he has gradually grown worse, voiding his urine from twenty-five to thirty times a day, and very often during the night, always attended with excruciating pain. It takes him from five to ten minutes each time to empty his bladder. To-day he presents himself for treatment; is much emaciated and depressed in spirits; has tried all the different "pathies," and has very little faith in any treatment. Upon examination the outer surface of the urethra feels roughened and indurated, and there is found in the perineum a swelling about the size of a hen's egg. The latter has developed itself gradually during the past three weeks, and he is certain that it grows larger when attempting to urinate, and decreases in size after emptying his bladder; the swelling is hard to the touch; very painful, and especially so on attempting to urinate.

Upon attempting to explore the urethra, after injecting the same with warm oil, the smallest bulbous-pointed bougie is arrested about two inches from the meatus, and detects two well-defined strictures at this point, beyond which it will not pass. After some effort and the use of five whalebone guides, one is finally passed into the bladder; on this a No. 2 tunnelled sound, and then, although attended with great pain, Gouley's No. 3 telescoped silver catheter, through which about two ounces of very offensive urine passed; some hemorrhage followed. No. 3 bulbous-pointed bougie now detects four well-defined strictures in the spongy portion of the urethra, one near the meatus, and the others about three-quarters of an inch apart. The same bougie also detects a stricture in membranous part of urethra, passing it and entering the bladder, causing great pain all along the urethra, and eliciting from him the remark that he would have to be anesthetized if the operation was to be repeated; ordered rest, tr. ferri et quinine sulph. internally, and the application of linseed meal poultices to the perineum and hypogastric regions.

*September 4.* No chill; passes his urine with more ease and less frequently; feels encouraged; internal treatment continued. No. 3 black elastic bougie passes with ease, and little complaint on part of patient.

*October 15.* Has continued the iron and quinine; improved in appearance; has gained strength and appetite, and is very much encouraged; elastic bougies have been passed every day or two, the urethra gradually becoming accustomed to their use, until No. 10 passes with little pain, excepting at the meatus. The swelling in the perineum has entirely disappeared; not obliged to empty his bladder during the night, and but once every two hours during the day; the passage of No. 10 steel sound causing some pain at the meatus, the latter is incised with the meatotome; very little hemorrhage: ordered to continue quinine and iron.

*22d.* To-day passed No. 10 steel sound with ease into the bladder. The swelling in the perineum has entirely disappeared. Is passing a good stream, and not obliged to empty his bladder during the night.

The patient is called away from the city for six weeks; is ordered and instructed to pass a No. 10 elastic bougie two or three times weekly.



**CASE XIX.** *Two strictures; gradual dilatation; divulsion; partial recovery.*—April 12, 1872. McG. H., æt. 28; intemperate and dissipated; contracted first attack of gonorrhœa five years ago; recovered in about three months after pursuing the usual treatment; no injection used. After three years had another attack, which proved to be severe; was treated for a long time with copaiba, etc., internally; also used a variety of injections; has had a constant gleet discharge since last attack, which increased after coition and was frequently attended with scalding and a profuse yellow discharge.

Condition would improve with internal treatment; habits led to within two months, when he stopped drinking, etc. Upon examination, two strictures are detected four and one half, and five inches from meatus. The stream of urine has been growing smaller during the last three months, and is voided with difficulty. No. 3 black elastic French bougie passes with some effort into the bladder.

June 20, 1872. He has taken internally tr. ferri, ergot, and cantharides; elastic bougies, gradually increasing in size, have been passed two or three times a week until No. 10 gives so much pain that he objects; a whalebone guide was now passed and upon it Gouley's modification of Thompson's divulsor, and both strictures thoroughly divulsed; less painful than the passage of the bougie; passed No. 12 steel sound; iron and quinin ordered internally.

July 2. No unpleasant symptom followed the divulsion; discharge almost entirely ceased; passed No. 13 steel sound; health much improved and feels encouraged; not obliged to void his urine during the night.

November 1. Have introduced No. 13 and 14 steel sounds once or twice a week with little effort; ordered to pass sound occasionally.

July 27, 1873. Reports for first time to-day since last November; habits have been good; feels excellent; passes a good stream; no gleet discharge; he passed the sound but a few times. Upon examining his urethra, only No. 10 sound can be passed; the stricture four and one-half inches from meatus has contracted considerably; the second one, five inches from meatus, cannot be detected with a bulbous-pointed bougie which passes the first stricture. Promises to call once a week until first stricture is dilated, or internal urethrotomy performed; no further internal treatment, as health is excellent.

October 1. He failed to call again.

**CASE XX.** *Six strictures; gradual dilatation; use of meatotome; result partial; case still under treatment.*—W. H. J., æt. 27; irregular habits; had first attack of gonorrhœa five years ago; used a strong injection of sugar of lead (20 grs. to 3j). This aggravated his trouble, and for three months he passed bloody urine. A year after had a second attack; after this "a sore," as he terms it, formed on the under surface of the penis; an abscess following, a physician lanced it, and patient states "that he cut into the urethra." The abscess filled again and was lanced; after this he improved.

Two years ago had another attack, when an abscess again formed in the same place; had it lanced again, and states that "it healed by the external application of calomel." Five months ago had a chancre for which he was treated by a physician; the abscess again filled, and for this he now applies for treatment; first noticed that he had a stricture four years ago; gradually grew worse until two years ago, when he had almost complete retention. He was in the west, and a surgeon there operated on him while

under the influence of chloroform; was obliged to use a bougie once a month after this for a year.

*September 10, 1873.* To-day on applying for treatment he states that for the past two months he has not been able to use the bougie; that his stream of urine has been gradually growing smaller, until now it is frequently passed only in drops; that it requires great force on his part; that two weeks ago the fistulous opening on the outer surface of the penis began discharging urine, and has given him much pain and annoyance since. On examination the meatus will scarcely admit No. 5 bulbous-pointed bougie, and is arrested three-quarters of an inch back from the meatus. The smallest sized elliptical bulbous bougie is with some effort, and after injecting the urethra with warm oil, passed into the bladder. On introducing it a stricture is detected in membranous part, and four distinct ones in the spongy portion of the urethra, also one at the meatus. The fistulous opening is about midway in spongy portion of the urethra externally, and communicates with the internal portion of the canal about one-half inch further back. A small silver probe can be passed through into the urethra. There is an unpleasant gleet discharge; urethra very sensitive; patient is compelled to pass urine very often day and night; ordered internally tr. ferri; also, gradual dilatation is commenced.

*24th.* No. 8 olive-pointed bougie can now be passed into the bladder; the fistulous track has closed; passes urine with more ease; treatment continued.

*October 10.* To-day No. 10 elastic bougie, giving much pain in stricture near meatus, the latter is freely incised; hemorrhage quite profuse and not easily controlled; is much improved in appearance and general health; ordered to pass No. 12 bougie beyond meatus eight o'clock morning.

*14th.* Though the hemorrhage has been somewhat troublesome it is now arrested, and can, with ease, pass No. 10 steel sound into the bladder; says he is sure that he is passing a larger stream than he ever did; is not obliged to empty his bladder at night; the gleet discharge has diminished. On examining his urethra with No. 5 bulbous-pointed bougie, which passes without much trouble into the bladder, all the strictures spoken of can be distinctly defined. The use of Goale's dilating urethrotome is suggested for treating strictures in the spongy portion of the urethra, but he objects so decidedly that gradual dilatation is necessarily continued; internal treatment continued.

*November 10.* Patient remains about the same; the attempt to pass a larger than No. 10 steel sound causes great pain in spongy portion of the urethra.

Gleet discharge has about ceased, and patient is feeling, as he says, about well; has gained much in health and flesh. On a proper representation of his case, he states that after having attended to some very important business matters, will allow the use of such instruments as we think best.

Internal treatment discontinued; use of No. 10 steel sound continued twice a week.

From the foregoing cases we are led to believe that the treatment of stricture, by gradual dilatation when possible, is by far the simplest and safest method. That at first, in this method of treatment, the soft olive-pointed bougie is the best, until No. 7 or 8 is reached, and then the metallic sound is more rapid in its results and equally as safe.

That to insure success the gradual dilatation must be kept up for years at intervals.

That in strictures of small calibre, where it is only possible to introduce the whalebone guide, division in the membranous portion, and internal urethrotomy in the spongy portion, are the better methods.

That strictures in the spongy portion, in consequence of their painful character, do not well bear treatment by gradual dilatation, particularly if the case is one of long standing.

In the cases which we have presented we see well exhibited some of the complications met with in the treatment of stricture, such as urethral fever and hemorrhage.

One case illustrates well the treatment of stricture of large calibre by means of the dilating urethrotome.

ART. XI.—*Cases of Penetrating Wound of the Abdomen and Chest, with Remarks upon the Treatment of such Injuries.* By JAMES C. REA, M.D., Resident Physician to the Episcopal Hospital, Philadelphia.

CASE I. *Penetrating Wound of Abdomen, with Protrusion of Omentum.*—M. E., a young married woman, was admitted to the Episcopal Hospital about 1 A. M. of January 4, 1874, having been stabbed in the abdomen by her husband some three hours previously. The wound was situated on the left side, just above the anterior superior spinous process of the ilium, and extended about one and a half inches from this point upwards and outwards; the omentum had protruded when the patient fell after the wound was received, and, when she entered the hospital, projected in a mass the size of the fist, and was somewhat congested, though there had been no bleeding from its surface. An attempt was immediately made to return the protrusion by gentle manipulation, with the patient lying on her right side, but without success. Cloth moistened with tepid water were then placed over the wound, and half a grain of morphia given by the mouth. The patient was allowed milk as desired, and kept fully under the influence of morphia. Twelve hours after the receipt of the injury, the attending surgeon, Dr. John Ashhurst, Jr., passed two ligatures of strong hempen cord through the centre of the pedicle of the protruding mass, one-quarter of an inch from the line of the wound, tying each ligature separately so as to strangulate the part in two halves. The ligated portion was then cut off half an inch beyond the ligatures, and the pedicle secured beneath the skin and superficial tissues of the wound, the wound itself being closed with silver sutures and dressed with lint soaked in olive oil. The patient was given milk exclusively for diet, and a pill of calomel gr.  $\frac{1}{2}$ , with pulv. opii gr.  $\frac{1}{2}$  every three hours; in the evening there was some pain, localized about the seat of injury, but no symptoms of diffused peritonitis.

Jan. 5. Had several evacuations during the night, but slept well in the intervals; tongue slightly coated, and patient somewhat feverish; choughed